



Department of Energy

Idaho Operations Office
850 Energy Drive
Idaho Falls, Idaho 83401-1563

September 20, 1995

Mr. Wayne Pierre, Chief
Federal Facilities Superfund Branch
U. S. Environmental Protection Agency
Region 10, HW-124
1200 Sixth Avenue
Seattle, WA 98101

Mr. Dean Nygard, INEL Technical Supervisor
Idaho Department of Health and Welfare
Division of Environmental Quality
Community Programs
1410 N. Hilton
Boise, ID 83706

SUBJECT: Assessment of Risk from External Exposure to Radiation from Contamination
Brought to the Surface by Biological Activity at the SL-1 and BORAX-I Sites
- (OPE-ER-177-95)

Dear Messrs. Pierre and Nygard:

The subject document prepared by the Environmental Research and Science Foundation (the Foundation) is transmitted for your review and use. Copies were faxed to your offices the morning of September 19, 1995. This report analyzes the risk to human health posed by direct exposure to contaminated soil brought up out of the SL-1 and BORAX-I burial grounds by ants, small mammals and vegetation (biotic intruders).

The residential exposure scenario contained in this document is not necessarily accepted as appropriate by this office since one premise behind selection of the preferred alternative, engineered barriers, is that the residential scenario will be averted through land use restrictions and/or the presence of large cobbles and permanent markers placed at each site. The reasonableness of assuming that biotic intruders will begin colonizing the barrier immediately after construction is also subject to question since the large cobble layer planned for each barrier would be expected to inhibit these intruders. Nevertheless, the residential scenario and immediate colonization of the barriers by biotic intruders have been included in an effort to bound the potential risk.


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The subject study indicates that the risk of excess cancers due to direct exposure to ionizing radiation for the recreational, industrial, and residential scenarios occurring beginning in the year 2094 are $9.3E-07$, $6.8E-06$ and $2.3E-05$ respectively at the SL-1 burial ground, and $5.6E-07$, $4.1E-06$ and $1.4E-05$ at the BORAX-I burial ground. These figures assume maximum burrow depth by all intruders and the presence of 1.5 meters of soil above the waste. Additional important assumptions are contained in the document.

Your comments concerning the assumptions contained in this report and the conclusion that the risks are within the acceptable risk range are requested.

If this document is found acceptable by all parties, it will be considered final and placed into the administrative record prior to signature of the record of decision for these burial grounds. Achieving signature by September 29, 1995 is desired to facilitate progress of the remedial actions for these sites. Your cooperation in achieving this goal is appreciated.

Sincerely,


for Lisa A. Green, Manager
Environmental Restoration Program

Enclosures

cc: H. Orlean, EPA, 1200 Sixth Avenue, Seattle, WA 98101 w/2
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